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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/723,618	11/25/2003	Changsoo Kwak	2013PI30	1082
8791	7590	06/01/2005		
			EXAMINER	
			PYO, KEVIN K	
			ART UNIT	PAPER NUMBER
			2878	

DATE MAILED: 06/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/723,618	KWAK ET AL. 
	Examiner Kevin Pyo	Art Unit 2878

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on _____.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-6 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1-6 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 25 November 2003 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>11/25/03; 1/26/04</u> .	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: _____

Specification

1. The disclosure is objected to because of the following informalities:

On page 2, line 23, "onto" should be changed to --over--.

The specification has not been checked to determine the presence of all minor errors in the disclosure. Applicant's cooperation is requested in determining any additional error of which applicant become aware in the specification.

Claim Objections

2. Claim 1 is objected to because of the following informalities:

In claim 1, line 5, "onto" should be changed to --over--.

In claim 1, line 12, "on" should be changed to --in--.

In claim 1, line 15, "on" should be changed to --in--.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. Claims 1-6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 1 and 7, these claims recite the limitation "the laser beams that are reflected from the mask and the substrate and return to their original positions, respectively" (emphasis added). In view of the displaced arrangement of the light source 213 and the light

detector 215 (in Fig.3), it is unclear how the laser beams emitted from the light source 213 return back to their original positions (the light source 213). Clarification is required.

Regarding claim 2, it is unclear what is meant by the phrase “virtually checked” in line 4 due to the confusing nature of wording therein.

Claims not specifically mentioned above are rejected by virtue of their dependency on a rejected claim.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jeong (Korean Patent application publication P2000-0055698) in view of Kouno et al (US 5,239,183).

Regarding claims 1 and 6, as far as the claim is understood, Jeong discloses a gap measuring apparatus (Fig.2) comprising a laser sensor device (50, 60 and 70) placed above a mask (M) and a substrate (G) that are spaced apart from each other by a predetermined gap, emitting laser beams and measuring a gap between the mask and the substrate using distance values based on light receiving positions of the laser beams that are reflected from the mask and the substrate. Jeong does not specifically mention the use of X, Y and Z direction transferring units. However, Kouno et al shows in Figs.26 and 27 a laser sensor device is attached to three piezoelectric elements (2x, 2y, 2z) in view of moving the laser sensor device in the x, y, and z

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directions and it would have been obvious to one of ordinary skill in the art to utilize the teaching of Kouno et al in the device of Jeong in view of the desire to provide the movement of the sensor device of Jeong in the x, y and z directions.

Regarding claims 2-4, as far as the claim is understood, Kouno et al shows in Fig.26 an image processor (62), a display (63) and a controller (61).

Regarding claim 5, it would have been obvious to utilize a plurality of laser displacement sensor at different location in view of the desire to achieve gap measurements between a mask and a substrate at high speed.

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Matsumoto (6,639,923) is cited for disclosing a position deviation detection device.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Pyo whose telephone number is (571) 272-2445. The examiner can normally be reached on Mon-Fri (with flexible hour), First Mon. off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David P. Porta can be reached on (571) 272-2444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Kevin Pyo
Primary Examiner
Art Unit 2878

Pkk
5/31/05